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Orotherium Marsh, and *Hyracotherium* Owen (to which latter Cope refers *Orohippus* Marsh). *Hyracotherium* has several near allies, both in the Old World and the New, and is here treated not only as a Perissodactyl, but is considered as having ancestral relations to the Equine series.

Passing over the interesting Review of the Characteristics of the Vertebrate Fauna of the Wahsatch Eocene of New Mexico (pp. 269–282), we have space for only a very brief notice of the chapter devoted to the fossils of the “Loup Fork Epoch.” Among these are described two species of tortoise (*Testudo*), and one bird referred to the genus *Vultur*. Of the mammalia three are Rodents, three Carnivora (one referred to *Putorius* and two to *Canis*, one of the latter, *C. ursinus*, as large as the black bear), one Proboscidian (*Mastodon productus*), four Perissodactyls, and eleven Artiodactyls. The latter belong chiefly to the cameline group (genera *Merychys* Leidy, *Procamelus* Leidy, and *Phliauchenia* Cope) and partly to the peculiar deer-antelope type here referred to *Dicrocerus* Lartet (*Merycodus* and *Corsoryx* Leidy), a probable progenitor of the deer tribe (*Cervidæ*).

The Loup Fork beds have been commonly viewed as representative of the Pliocene of France, although their exact synchronism has been considered as doubtful. Professor Cope believes that the general facies of the Loup Fork fauna indicate an earlier age than this, and that the Pliocene of America remains yet to be defined. The Loup Fork fauna is characterized by an absence of fishes and crocodiles, from which it is inferred that the “formation is that of a marsh and not of a lake.” The fauna has been studied at three widely separated localities in the region west of the Mississippi River, between the strata of which there is a near lithological resemblance, and the fauna collectively presents a common character as distinguished from that which preceded and followed. It is hence isolated alike from the Quaternary and the White River epochs. Only three of the genera have living representatives, one of which (*Canis*) also occurs in the White River beds.

In conclusion may be noted the growing tendency to a recognition of the generic identity of a considerable proportion of the Tertiary genera of North America with their European representatives of approximately corresponding age.

THE WILD FLOWERS OF AMERICA, PART II.¹ — The second part of the present work includes plates of *Iris versicolor* L., the common blue flag; *Rudbeckia columnaris* Pursh, the columnar cone-flower; *Viola sagittata* Aiton, the arrow-leaved violet, accompanied by a figure of *Carex Pennsylvanica* Lam.; and *Steironema lanceolatum* Gray, the lance-leaved loosestrife. The latter plant is more familiar to our botanists under the older name of *Lysimachia lanceolata*. The four plates are beautifully

¹ *The Wild Flowers of America*. Part II. Illustrations by ISAAC SPRAGUE. Text by GEORGE L. GOODALE, M. D., Assistant Professor of Vegetable Physiology, and Instructor in Botany, in Harvard University. Boston: H. O. Houghton & Co.; New York: Hurd & Houghton.

executed and quite equal to those in Part I., although none of the species in the present number are as picturesque as *Aquilegia Canadensis* L., previously figured. The plates of the loosestrife and the arrow-leaved violet seem to us to be most successful as far as the accuracy of the representation is concerned. The most beautiful plate is that of the iris, which could be surpassed only by nature itself, for, in the species of this beautiful genus, such is the delicate shading of the colors and the exquisite translucence of the standards and the stigmas that art, at the best, must fall a little short of nature. With regard to the figure of *Carex Pennsylvanica* which accompanies the *Viola sagittata* we would suggest that its botanical value would have been enhanced had a matured spike also been figured. The descriptive text is shorter than that in Part I., but in *Viola sagittata* and *Iris Virginica* Professor Goodale has found material for some very interesting remarks on cleistogamous flowers and insect fertilization. In the present fasciculus the plates are not stitched but folded in the cover. In this connection we must express the hope that the publishers will give the public the opportunity of purchasing extra copies of some of the plates for framing, as we can think of no more appropriate ornaments for a school-room or lecture hall than the beautiful plates of this series. — W. G. FARLOW.

GENERAL NOTES.

BOTANY.¹

FERTILIZATION OF FLOWERS BY BIRDS. — From recent mention of this subject in Mr. Darwin's new work, and in a review of it by Dr. Gray in the *American Journal of Science*, and two notes in *Nature*, I conclude that but few instances are known in which birds visit flowers. In the United States Dr. Gray names honeysuckles and trumpet creeper, in addition to *Impatiens*, which Darwin gives on authority of others.

The ruby-throated humming-bird is common in this State and is frequently seen about our flower beds and in the green-house. I have often seen it visiting lilacs, phlox *Drummondii*, perennial phlox, portulaccas, petunias, morning-glories, roses, honeysuckles, snapdragons, fuchsias, and I think many other species of which I have made no note. Several of the above were given me also by the gardener, Mr. Cassidy. He also had noticed that the birds came in through the ventilators of the greenhouse in spring to visit the fuchsias, of which they seem very fond, but after spring flowers appear their visits are less common. Again they frequent the flowers in the greenhouse in times of dry weather. I have not made as many notes on this subject as I now wish I had, but I am quite sure it will turn out that they visit a large number of species of our wild and cultivated flowers. They visit them with much greater rapidity than is common with the honey-bee. — W. J. BEAL.

¹ Conducted by PROF. G. L. GOODALE.